

## **REMARKS**

In response to the above-identified Office Action (“Action”), Applicants traverse the Examiner’s rejection to the claims and seek reconsideration thereof. Claims 1-31 are now pending in the present application. Claims 1-31 are rejected. In the instant response, no claims are amended, no claims are cancelled and no claims are added.

### **I. Amendments**

Applicants respectfully submit herewith amendments to the specification to correct minor errors Applicants became aware of upon further review of the specification pursuant to the Examiner’s request. Applicants further amend the specification to delete the recitation of “a radio frequency (RF) link.” Since the amendments do not add new matter, Applicants respectfully request consideration and entry of the amendments to the specification.

### **II. Claim Rejections - 35 U.S.C. §101**

In the outstanding Action, the Examiner rejects claims 29-31 under 35 U.S.C. §101 because the claimed invention is directed to non-statutory subject matter. In particular, the Examiner alleges “computer readable medium” as recited in the claims is defined in the specification to include a radio frequency (RF) link and similar media and such elements are considered intangible media and therefore the claimed invention is directed to non-statutory subject matter. In response, Applicant respectfully submits herewith an amendment to the specification in which the recitation of “radio frequency (RF) link” is deleted. In view of the foregoing, Applicants respectfully request withdrawal of the rejection of claims 29-31 under 35 U.S.C. §101.

### **III. Claim Rejections – 35 U.S.C. §112, first paragraph**

In the outstanding Action, the Examiner rejects claims 1-31 under 35 U.S.C. §112, first paragraph, as failing to comply with the enablement requirement. Specifically, the Examiner alleges the terms “volatile” and “non-volatile” have been used extensively in the

specification without defining the meaning of the terms within the scope of the invention. The examiner states these terms are already associated with memory devices within the memory arts and cannot now be used to have a different meaning. Applicants respectfully traverse the rejection for at least the following reasons.

Applicants respectfully submit that one of ordinary skill in the art would not be confused by the use of the terms “volatile” and “non-volatile” in the instant application for at least the reason that Applicants are merely using these terms according to their ordinary meaning and the meaning of these terms are well known in the context of the instant invention. The instant application is directed to methods and apparatus for enabling and managing volatile shared data across caches in a coherent memory multiprocessor system to reduce coherency traffic. Data sharing is managed by indicating a status or state of a cache line or segment corresponding to the requested data so that other processors are aware of changes made to the data. The state of the cache line may be, for example, a “modified volatile state”, “exclusive volatile state” and “shared volatile state.” See Application, page 6, paragraph [0014], lines 3-5. A segment of the cache line may be labeled, for example, as a “volatile segment” or a “non-volatile segment.” See Application, page 8, paragraph [0023], lines 18-22.

A review of any standard dictionary will show that the term “volatile” refers to something which varies often or fluctuates. See, for example, the results of a search on the website [www.dictionary.com](http://www.dictionary.com) attached herewith for the term “volatile.” Moreover, as can be seen from these search results, in addition to the term “volatile” being used in the context of storage devices as suggested by the Examiner, the term is also commonly used in the context of computer programming. See, for example, page 3 of the search results for the term “volatile.” In particular, the term “volatile variable” is defined to mean “a variable in computer programming which can be modified by processes other than the program. See, for example, page 1 of the search on the website [www.dictionary.com](http://www.dictionary.com) attached herewith for the term “volatile variable.” One of ordinary skill in the art would further understand the term “non-volatile” as meaning something that is not volatile. Accordingly, whether, for example, the term “volatile” is used in the context of storage devices, computer programming or any other context for that matter, it is

simply an adjective used to specify that something, whether it be an object or status of a cache line, may be modified or variable.

Applicants' specification and claims recite phrases such as "modified volatile state", "exclusive volatile state" and "shared volatile state." The phrase "modified volatile state" is defined in the specification to "indicate that cache line 203 contains data that is modified but which may be shared with caches associated with other processors." See Application, page 7, paragraph [0020], lines 19-21. The phrase "exclusive volatile state" is defined in the specification to "indicate the content of cache line 203 is shared with another processor or device and the associated processor or device has ownership." See Application, page 8, paragraph [0022], lines 8-10. The phrase "shared volatile state" is defined in the specification to "indicate that the contents of cache line 203 are shared with another processor or device." See Application, page 8, paragraph [0021], lines 3-4. Moreover, a "volatile segment" is defined on page 8, paragraph [0023], lines 18-20, to be "a segment that contains data that may be changed by the owning processor without notice to other processors or devices." The phrase "non-volatile segment" is defined on page 8, paragraph [0023], lines 20-22, to be "a segment that may generate a notification to a sharing processor or device if it is modified by the owning processor or device." Thus, even if there were any question as to the meaning of "volatile" and "non-volatile" upon review of the claims, and Applicants do not believe there is, the specification clearly defines the manner in which the terms are used within the scope of the invention.

Accordingly, since the meaning of the terms "volatile" and "non-volatile" are well known in the art and further clearly defined in the specification, claims 1-31 are in compliance with 35 U.S.C. §112, first paragraph. For the foregoing reasons, Applicants respectfully request withdrawal of the rejection of claims 1-31 under 35 U.S.C. §112, first paragraph.

#### **IV. Claim Rejections – 35 U.S.C. §112, second paragraph**

In the outstanding Action, the Examiner rejects claims 1-31 under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which the Applicants regard as the invention. Specifically, the

Examiner alleges the claim language uses the terms “volatile” and “non-volatile” in conjunction with cache lines and cache line segments without adequately providing meanings within the specification for this use of the terms.

For at least the reasons previously discussed, the meaning of the terms “volatile” and “non-volatile” in the context of the cache lines and cache line segments are clearly defined in the specification. Thus, there is no ambiguity or confusion as to the scope of the language or the meets and bounds of the claims. Accordingly, claims 1-31 are in compliance with 35 U.S.C. §112, second paragraph. For the foregoing reasons, Applicants respectfully request withdrawal of the rejection of claims 1-31 under 35 U.S.C. §112, second paragraph.

**V. Piecemeal Examination**

As pointed out above, the claim terms the Examiner takes issue with are understood in the art and were further defined in Applicants’ specification. In the instant Action, however, the Examiner issues several technical rejections without providing a substantive review of the claims. As the Examiner is no doubt aware “piecemeal examination should be avoided as much as possible.” See MPEP §707.07(g). Accordingly, Applicants respectfully request the next Office Action be non-final and include a substantive review of the claims.

### CONCLUSION

In view of the foregoing, it is believed that all claims now pending, namely claims 1-31, are now in condition for allowance and such action is earnestly solicited at the earliest possible date. If there are any additional fees due in connection with the filing of this response, please charge those fees to our Deposit Account No. 02-2666. Questions regarding this matter should be directed to the undersigned at (310) 207-3800.

Respectfully submitted,

BLAKELY, SOKOLOFF, TAYLOR & ZAFMAN LLP

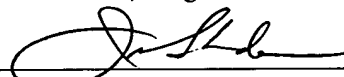
Dated: August 11, 2006

  
Thomas M. Coester, Reg. No. 39,637

12400 Wilshire Boulevard  
Seventh Floor  
Los Angeles, California 90025  
(310) 207-3800

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## 9 entries found for *volatile*.

vol·a·tile  **Pronunciation Key** (vŏl'ə-tl, -tīl'  
adj.

1. Chemistry.
  - a. Evaporating readily at normal temperatures and pressures.
  - b. That can be readily vaporized.
2.
  - a. Tending to vary often or widely, as in price: *the ups and downs of volatile stocks*.
  - b. Inconstant; fickle: *a flirt's volatile affections*.
  - c. Lighthearted; flighty: *in a volatile mood*.
  - d. Ephemeral; fleeting.
3. Tending to violence; explosive: *a volatile situation with troops and rioters eager for a confrontation*.
4. Flying or capable of flying; volant.

[French, from Old French, from Latin volātilis, *flying*, from volātus, past participle of volāre, *to fly*.]

vol' a·tile *n*.

vol' a·til' i·ty (-tīl' ī-tē) or vol' a·tile·ness (-tl-nīs, -tīl'-) *n*.

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*Fourth Edition*

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**vol·a·tile** (vŏl'ə-tl, -tīl')  
adj.

1. Evaporating readily at normal temperatures and pressures.
2. That can be readily vaporized.
3. Tending to violence; explosive, as of behavior.

*Source: The American Heritage® Stedman's Medical Dictionary*  
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**volatile**

Tending to be subject to large price fluctuations. Traders generally prefer volatile securities if they buy and sell on short-term price movements. *See also* [beta](#).

*Source: Wall Street Words: An A to Z Guide to Investment Terms for Today's Investor by David L. Scott.*  
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Main Entry: <sup>1</sup>**vol·a·tile**

Pronunciation: 'vāl-&t-&l, esp Brit -&-"tīl

Function: *noun*

: a volatile substance

*Source: Merriam-Webster's Medical Dictionary, © 2002 Merriam-Webster, Inc.*

Main Entry: <sup>2</sup>**volatile**

Function: *adjective*

: readily vaporizable at a relatively low temperature —**vol·a·til·i·ty** /'vāl-&-'tīl-&t-E/ *noun plural -ties*

*Source: Merriam-Webster's Medical Dictionary, © 2002 Merriam-Webster, Inc.*

**volatile**

adj 1: evaporating readily at normal temperatures and pressures; "volatile oils"; "volatile solvents" [ant: [nonvolatile](#)] 2: liable to lead to sudden change or violence; "an explosive issue"; "a volatile situation with troops and rioters eager for a confrontation" [syn: [explosive](#)] 3: marked by erratic changeableness

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in affections or attachments; "fickle friends"; "a flirt's volatile affections" [syn: fickle] 4: tending to vary often or widely; "volatile stocks"; "volatile emotions" n : a volatile substance; a substance that changes readily from solid or liquid to a vapor; "it was heated to evaporate the volatiles"

Source: WordNet ® 2.0, © 2003 Princeton University

## volatile

1. <programming> volatile variable.
2. <storage> See non-volatile storage.

(1997-06-05)

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## volatile

volatile in InvestorWords

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### volatile variable

<programming> A variable in a computer program which can be modified by processes other than the program. For example, a variable that stores the value of a timer chip (either because it is located at the address of the hardware device or because it is updated on interrupts) needs to be volatile to be useful.

A static variable, on the other hand, maintains its value until the program changes it or it is no longer needed. In addition, volatile variables can be held in the stack whereas static variables are usually stored in a program's data segment.

(1995-05-17)

Source: The Free On-line Dictionary of Computing, © 1993-2005 Denis Howe